GCT-MGXm

User's Manual

Version 1.0

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Introduction

1.1. PERFACE

Welcome to use GCT-MGXm Cyrix MediaGX MMX All-In-One System Board. You can be very easy to enjoy the highest level of total integration solution through your Pentium-Class PC. Of course, you are more than to get an unachievable price of full feature system board without any compromise of the performance, now you just have a 6-in-1 (Games, MPEG, Graphics, Processor, Sound, and TV) system board with Cyrix MediaGXm integrated x86 solution plus MMX technology support.

The Cyrix MediaGX processor family's latest memeber-GXm is an advanced 64-bit x86 compatible processor that offering high performance, fully accelerated 2D graphics, a 64-bit Synchronous DRAM controller and PCI bus controller, all on a single chip, plus it is compatible with MMX technology. In addition to the advanced CPU feature, a 16-Kbyte write-back L1 cache is accessed in a novel fashion that eliminates pipe-line stalls to fetch operands that hit in the cache, a separate on-chip video buffer enable >30FPS MPEG1 video playback, a tightly-coupled Synchronous DRAM controller support the Graphics and system memory accesses and eliminate the need for an external L2 cache.

Also, from this system board, you can have Cyrix's Virtual System Architecture (VSA) enabling XpressGraphic and XpressAudio as well as generic emulation capabilities. Software handler routines for XpressGraphics and XpressAudio are included in the BIOS and provide compatible BGA and 16-bit industry standard audio emulation. Please enjoy the fun of Multi-Media and start to set up your PC now following by this

manual.

1.2. Key Features

* Supports the MMX instruction set extension for the acceleration of multimedia applications.
* 64-bit Cyrix MediaGXm Processors 180MHz up to 2XX MHz
* Cyrix CX5520 chipset supports Integrated Graphics, Sound and Memory control.
* An internal 16-KByte Write-Back L1 cache
* Enhanced System Management Mode (SMM)
* Providing Power Management on only CPU suspend and 3V full suspend
* Windows 95 Compliant
* 2 x 168 pin Dimm sockets support 3.3V SDRAM only.
* Expandable memory up to 128MB
* 2 master PCI slots & 2 ISA slots
* On board VGA supports 1280x1024 x 8 BPP and 1024 x 768 x 16 BPP.
* On board Audio controller compatible with Sound Blaster 16/PRO, MPU-401 Interface
* On board super Multi-I/O chip supports 2 x 16550 compatible serial ports, 1 x standard SPP/EPP/ECP paraller port, 2 x 1.2MB/1.44MB/2.88MB floppy disk driver interface.
* 2 x PCI IDE ports (DMA mode 0/1/2, PIO mode 4)
* Supports PS/2 Mouse Port
* Supports Two kinds of display devices (CRT & TV)
* 2 x USB ports (cable option), 1 x IrDA connector (cable option), 1 x Game port
* PnP Flash EEPROM, NCR SCSI BIOS, supports 120MB Diskette Bootup
* 4-Layer PCB, 22 cm x 20 cm, Baby AT Form Factor

Hardware Configuration

2.1. Unpacking the Mainboard

- ✓ **The GCT-MGXm Cyrix MediaGX System Board**
- ✓ **The Quick Reference Sheet**
- ✓ **CD Disk**
- ✓ **MIDI Board**
- ✓ **Full Set Cables**

2.2. Power Precautions

Before beginning configuration, make sure that you are working with an unplugged mainboard. Many components are powered by lower-voltage current, but there still may be a dangerous electric current coming from the leads and power supply. You should take the following precautions.

* Turn off the power supply and unplug the power cord before you begin.

* Unplug all cables that connect the mainboard to any external devices.

2.3. Mainboard Component Location

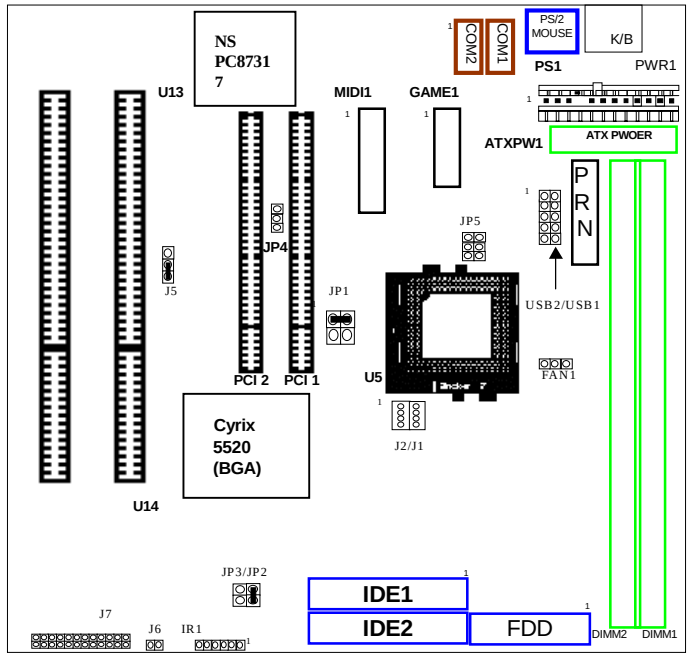
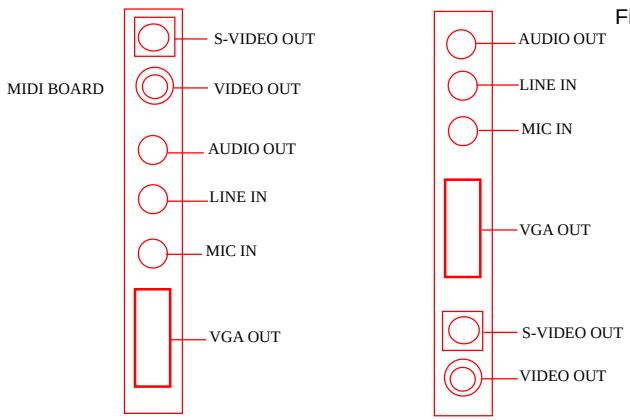


Figure: 2-A



2.4. Jumper Settings

You can configure hardware options by setting jumper on the mainboard. See Figure 2-A for jumper locations.

Set a jumper on SHORT and OPEN as follows:

- SHORT-- By placing the plastic jumper cap over two pins of the jumper.
- OPEN-- Remove the jumper cap from the jumper cap.

**** SYMBOLS:***

For setting 3-pin jumpers, the below symbols are used:

Pins 1 and 2 are Shorted with a jumper cap.

Pins 2 and 3 are Shorted with a jumper cap.

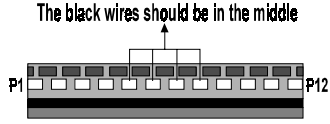
For setting 2-pin jumpers, the below symbols are used:

The jumper is Shorted when the jumper cap is placed over the two pins of the jumper.

The jumper is Open when the jumper cap is removed from the jumper.

2.5. PWR1 AT Power Supply Connectors

* The power supply connectors are two six-pin male header connectors. Plug the dual connectors from the power directly into the board connectors.
* Most of the power supplies have two leads and each lead has six wires. Two of which are black, orient the connectors, so the black wires are in the middle.
* Detail pin description as below:



Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

2.6. KB1 Keyboard Connector

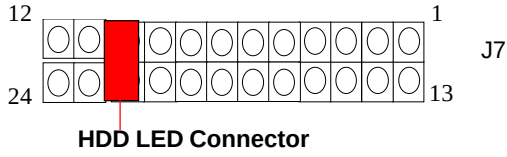
Connect your keyboard to this connector.

2.7.PS1 PS/2 Mouse Connector

Connect your PS/2 mouse to this connector.

2.8. HDD LED Connector

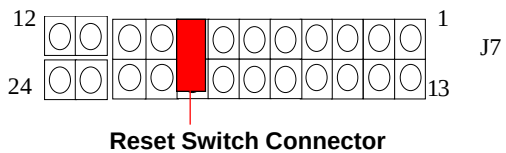
Attach the HDD LED Cable to this connector J7 (10,22)



Description	Pin
+ 5V Active Low	

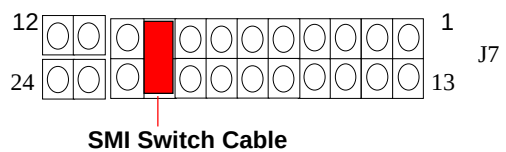
2.9. Reset / SMI Switch Connector

Attach the Reset Switch Cable to this connector J7 (8, 20).



Description	Pin
Normal Mode	Open
Reset System	Short

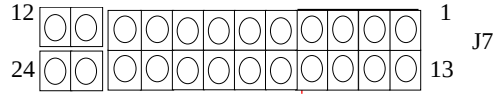
Attach SMI Switch Cable to this connector J7 (9, 21).



Description	Pin
Normal Suspend	Open Short

2.10. Speaker Output Connector

Attach the system speaker to the connector J7 (1-4).

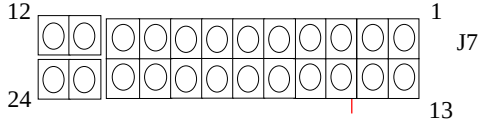


Speaker Connector

Pin	Description
4 1	1. DATA Out 2. NC 3. +5V 4. Ground

2.11. Power / Suspend LED Connector

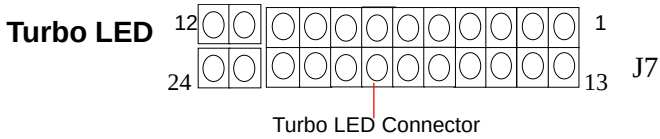
Attach the system power LED to the connector J7 (13-15).
(In the suspend mode, the Power LED will flash.)



Power LED connectors

Pin	Description
2 15 13	13. +5V 14. NC 15. LED (-)

2.12. Turbo LED Connector J7 (7,19)



Description	Pin
Ground LED (+)	

2.13. COM1 -- Serial Port COM1

2.14. COM2-- Serial Port COM2

2.15. PRN1 -- Parallel Printer Connector

2.16. FDD1 -- Floppy Drive Connector

2.17. IDE1 & IDE2

*** <IDE1>**-- Primary IDE Connector

*** <IDE2>**-- Secondary IDE Connector

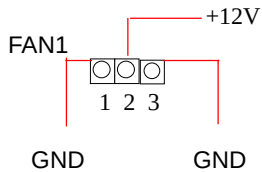
2.18. J5 CLEAR CMOS

Set the jumper J5 can clear the CMOS.

Description	J5
*Normal	
Clear CMOS	

2.19. FAN1 CPU FAN Connector

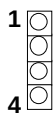
Connecting your CPU fan cable to this connector. When in System Suspend Mode, the CPU fan is OFF.



2.20. J2/J1 AUDIO CD-IN Connector

The 4-pin connector enables the system to receive the audio output from the CD-ROM.

J2: SONY



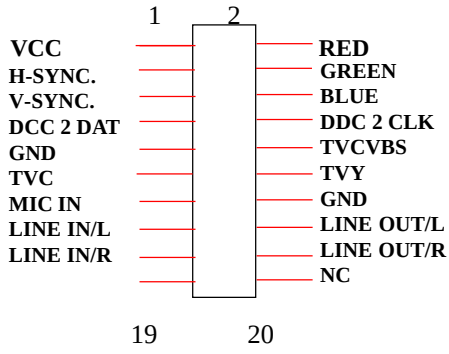
1. CD-R
2. GND
3. GND
4. CD-L

J1: PANASONIC

1. CD-R
2. GND
3. CD-L
4. GND

2.21. MIDI1 MGX-MIDI Board Connector

This connector enables you to connect MIDI Board.



2.22. GAME1 Port Cable Connector

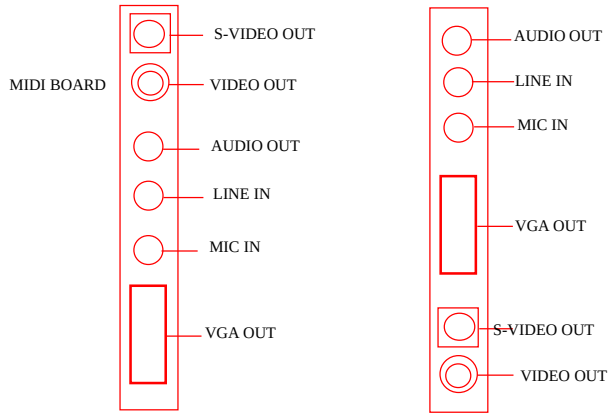
You may connect game joysticks or game pads to this connector.

2.23. JP4 LAN Wake Up Connector

Connecting your LAN Wake Up cable to this connector.

1. VCC SB
2. PM-LAN
3. GND

2.24. Extend MIDI Board.



1. S-Video Connector-- connect your TV's S-video In.

2. Composite and S-Video-- connect your Video In.

3. Line Out Jack-- connect your audio devices, such as Speaker/ TV Audio In to this jack.

4. Line IN Jack-- connect your Audio source to this jack.

5. Microphone Jack-- plug your Microphone to this jack.

6. VGA port-- connect your Monitor to this port.

2.25. MEMORY INSTALLATION

This mianboard lets you add up to 128 MB of system memory by using 3.3V SDRAM only.

BANK	Memory Module
DIMM2 BANK 2 / BANK3	4MB, 8MB, 16MB, 32MB, 64MB 168-pin DIMM (Single side, Double Side)
DIMM1 BANK 0 / BANK 1	4MB, 8MB, 16MB, 32MB, 64MB 168-pin DIMM (Single side,Double Side)

AWARD BIOS Setup

3.1. This chapter explains how to configure the BIOS setup program.

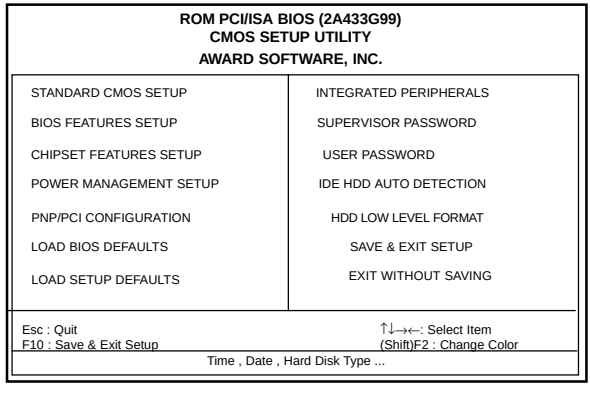
After you have configured the mainboard and have assembled the components, you can turn on the completed system. At this point, run the software setup to ensure that the system information is correct.

The software setup of the system board is achieved through Basic Input-Output System (BIOS) programming. You use the BIOS setup program to tell the operating system what type of devices are connected to your system boards. The system setup is also called CMOS setup, you need to run system setup if either the hardware is not identical with information contained in the CMOS RAM, or if the CMOS RAM has lost power.

3.1.1.Enter the Award Setup Program from Main Menu as follows:

1. Turn on or reboot the system. The following message appears at the bottom of the screen:
   " Press <DEL> to enter setup, ESC to skip memory test "

2. Press the **<DEL>** key to enter the Award BIOS setup program and the following screen appears:



3. Choose an option and press **<Enter>**. Modify the system parameters to reflect the options installed in the system. (See the following sections for more information.)

4. Press **<ESC>** at anytime to return to the Main Menu.

5. In the Main Menu, choose " **SAVE AND EXIT SETUP** "or **<F10>** to save your changes and reboot the system.
   Choosing " **EXIT WITHOUT SAVING** " or **<ESC>** ignores your changes and exits the program.

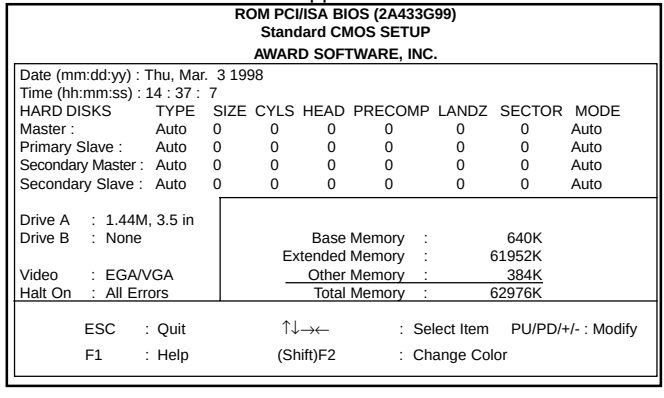
3.2. Main Menu Options

There are several options from Main Menu, in which you can find out what and how you should ensure your system information is correct. Go through the options as following sections and make your computer work perfectly.

3.3. STANDARD CMOS SETUP

Run the Standard CMOS Setup as follows.

1. Choose " **STANDARD CMOS SETUP** " from the Main Menu and a screen with a list of items appears.


ROM PCI/ISA BIOS (2A433G99)
Standard CMOS SETUP
AWARD SOFTWARE, INC.
Date (mm:dd:yy) : Thu, Mar. 3 1998
Time (hh:mm:ss) : 14 : 37 : 7
HARD DISKS TYPE SIZE CYLS HEAD PRECOMP LANDZ SECTOR MODE
Master : Auto 0 0 0 0 0 0 Auto
Primary Slave : Auto 0 0 0 0 0 0 Auto
Secondary Master : Auto 0 0 0 0 0 0 Auto
Secondary Slave : Auto 0 0 0 0 0 0 Auto
Drive A : 1.44M, 3.5 in
Drive B : None
Video : EGA/VGA
Halt On : All Errors
Base Memory : 640K
Extended Memory : 61952K
Other Memory : 384K
Total Memory : 62976K
ESC : Quit
F1 : Help
↑↓→← : Select Item
(Shift)F2 : Change Color
PU/PD/+/- : Modify

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys. Some fields let you enter numeric values directly.

Date (mm/dd/yy) Type the current date

Time (hh:mm:ss) Type the current time

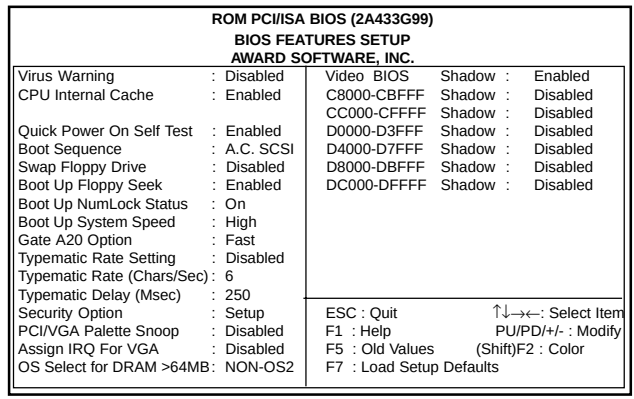
Primary master and slave **Secondary master and slave**	Choose from the standard hard disk types 1 to 45, or "User" defined. If you choose "User", run the IDE HDD Auto detection function from the Main Menu, or enter the HDD information directly from the keyboard and press <Enter>. If you use Auto mode, BIOS can Auto detect HDD type and do not enter any HDD information from the keyboard	
Drive A & B	Choose	360KB 5 1/4" 1.2MB 5 1/4" 720KB 3 1/2" 1.44MB 3 1/2" 2.88MB 3 1/2" None
Video	Choose	EGA/VGA, CGA 40, CGA 80, Mono
Halt On	Choose	All Errors (Default) No Errors All, But Keyboard All, But Diskette All, but Disk/Key

** After you have finished the Standard CMOS setup program, press the <**ESC**> key to return to the Main Menu.

3.4. BIOS FEATURES SETUP

Run the BIOS Features Setup as follows.

1. Choose " **BIOS FEATURES SETUP** "from the Main Menu and a screen with a list of items appears.


ROM PCI/ISA BIOS (2A433G99)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.
Virus Warning : Disabled
CPU Internal Cache : Enabled
Quick Power On Self Test : Enabled
Boot Sequence : A.C. SCSI
Swap Floppy Drive : Disabled
Boot Up Floppy Seek : Enabled
Boot Up NumLock Status : On
Boot Up System Speed : High
Gate A20 Option : Fast
Typematic Rate Setting : Disabled
Typematic Rate (Chars/Sec) : 6
Typematic Delay (Msec) : 250
Security Option : Setup
PCI/VGA Palette Snoop : Disabled
Assign IRQ For VGA : Disabled
OS Select for DRAM >64MB : NON-OS2
Video BIOS Shadow : Enabled
C8000-CBFFF Shadow : Disabled
CC000-CFFFF Shadow : Disabled
D0000-D3FFF Shadow : Disabled
D4000-D7FFF Shadow : Disabled
D8000-DBFFF Shadow : Disabled
DC000-DFFFF Shadow : Disabled
ESC : Quit
↑↓→←: Select Item
F1 : Help
PU/PD/+/- : Modify
F5 : Old Values
(Shift)F2 : Color
F7 : Load Setup Defaults

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys. An explanation of <**F**> keys follows:

   <**F1**>: "Help" gives options available for each item.

   <**F2**>: Change color

   <**F5**>: Get the old values. The user started the current session with these values.

   <**F6**>: Load all options in the BIOS Features Setup with the BIOS Default values.

   <**F7**>: Load all options in the BIOS Features Setup with the Setup Default values.

A short description of the screen items follows:

Virus Warning	Choose Enabled or Disabled. Enable this option and a SYSTEM WARNING MESSAGE appears when the system detects a virus.
CPU Internal Cache	Choose Enabled or Disabled. This option lets you enable the CPU internal cache memory.
Quick Power On Self Test	Choose Enabled or Disabled. Enabled provides a fast POST and boot-up speed.
Swap Floppy Driver	Choose Enabled or Disabled. When Enabled Floppy drives A & B are swapped under DOS.
Boot Up Floppy Seek	Choose Enabled or Disabled. "Disabled" provides a fast boot and reduces the possibility of damage to the heads.
Boot Up Num Lock Status	Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.
Boot Up System Speed	Choose High or Low. When select high, system boot up is high speed**.** When select low, system boot up is low speed.
Gate A20 Option	Choose Fast or Normal. The A20 pin will be fast or normal.
Typematic Rate Setting	Choose Enabled or Disabled. Enable this option to adjust the keystroke repeat rate.

Typematic Rate(Chars/Sec) Choose the rate a character keeps repeating.

Typematic Delay (Msec) Choose how long after you press a key that a character begins repeating.

Security Option Choose Setup, or System. Use this feature to prevent unauthorized system boot-up or unauthorized use of BIOS Setup.

"**System**" Each time the system boots the password prompt appears.

"**Setup**" Password prompt only appears if you attempt to enter the Setup program.

Video BIOS Shadow VIDEO shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM.

OS/2 Select for DRAM>64MB When using OS/2 operating systems with installed DRAM of greater than 64MB, you need to Enable this option otherwise leave this on the Setup default of Disabled.

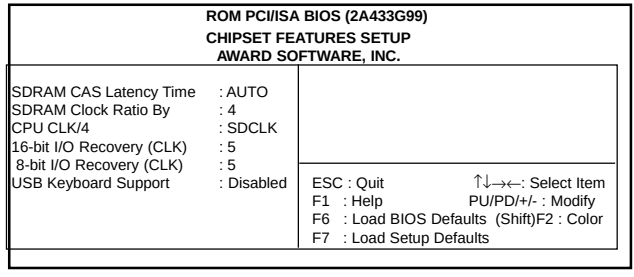
3. After you have finished with the BIOS Features Setup program, press the <**ESC**> key and then follow screen instructions to save or disregard your settings.

3.5. CHIPSET FEATURES SETUP

The **"CHIPSET FEATURES SETUP"** is used to control the values of the chipset registers. These registers control most of the system options in the computer.

Run the Chipset Features Setup as follows:

1. Choose " **CHIPSET FEATURES SETUP** " from the Main Menu and a screen with a list of items appears.


ROM PCI/ISA BIOS (2A433G99)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.
SDRAM CAS Latency Time : AUTO
SDRAM Clock Ratio By : 4
CPU CLK/4 : SDCLK
16-bit I/O Recovery (CLK) : 5
8-bit I/O Recovery (CLK) : 5
USB Keyboard Support : Disabled
ESC : Quit
↑↓→←: Select Item
F1 : Help
PU/PD/+/- : Modify
F6 : Load BIOS Defaults
(Shift)F2 : Color
F7 : Load Setup Defaults

2. SDRAM CAS latency timing will be showed as AUTO, 2T, or 3T. 2T is the fastest timing and 3T is the slowest timing.

3. 16-bit I/O Recovery (CLK): The I/O recovery mechanism adds bus clock cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is so much faster then the ISA bus.
   The choice: from 1 to 16 CPU clocks.

4. 8-bit I/O Recovery (CLK): The I/O recovery mechanism adds bus clock cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is so much faster then the ISA bus. This item allows you to determine the recovery time allowed for 8 bit I/O.
   The choice: from 1 to 16 CPU clocks

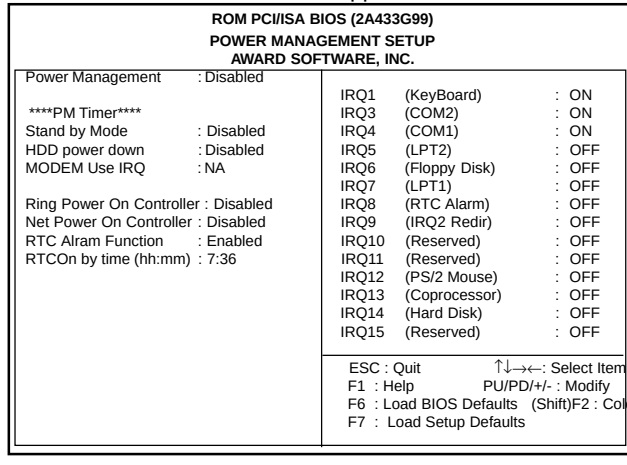
5. USB Keyboard Support: When using USB Keyboard, you need to Enabled this function.

3.6. POWER MANAGEMENT SETUP

The Power Management controls the mainboard's "green" features that for the power saving Mode, Display turn off and HDD power down that together from the hardware power conservation scheme.

Run the Power Management Setup as follows:

1. Choose " **POWER MANAGEMENT SETUP** " from the Main Menu and a screen with a list of items appears.


ROM PCI/ISA BIOS (2A433G99)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.
Power Management : Disabled
****PM Timer****
Stand by Mode : Disabled
HDD power down : Disabled
MODEM Use IRQ : NA
Ring Power On Controller : Disabled
Net Power On Controller : Disabled
RTC Alram Function : Enabled
RTCOn by time (hh:mm) : 7:36
IRQ1 (KeyBoard) : ON
IRQ3 (COM2) : ON
IRQ4 (COM1) : ON
IRQ5 (LPT2) : OFF
IRQ6 (Floppy Disk) : OFF
IRQ7 (LPT1) : OFF
IRQ8 (RTC Alarm) : OFF
IRQ9 (IRQ2 Redir) : OFF
IRQ10 (Reserved) : OFF
IRQ11 (Reserved) : OFF
IRQ12 (PS/2 Mouse) : OFF
IRQ13 (Coprocessor) : OFF
IRQ14 (Hard Disk) : OFF
IRQ15 (Reserved) : OFF
ESC : Quit ↑↓→←: Select Item
F1 : Help PU/PD/+/- : Modify
F6 : Load BIOS Defaults (Shift)F2 : Color
F7 : Load Setup Defaults

2. ***Power Management***: This category allows you to select the type (or degree) of power saving and is directly to the Doze Mode, Standby Mode, Suspend Mode, and HDD Power Down.

3. ***PM Timers***

*** Standby Mode:**

When enabled and after the set time of system inactivity, the fixed disk drive and the video would be shut off while all other devices still operate at full speed.

*** HDD Power Down:**

When enabled and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

*** Modem Use IRQ:**
This determines the IRQ in which the MODEM can use. The choice: 3,4,5,7,9,10,11,NA

4. Ring Power On Controller:
When you use ATX power connector, you can Enabled the Ring Power On function. The choice: Disabled & Enabled.

5. Net Power On:
The computer can be set to turn on through LAN system. However, the LAN card needs to support LAN Wake Up function.
The choice: Disabled & Enabled.

6. RTC Alram Function:
The RTC Alram can be chose by Disabled / Enabled.

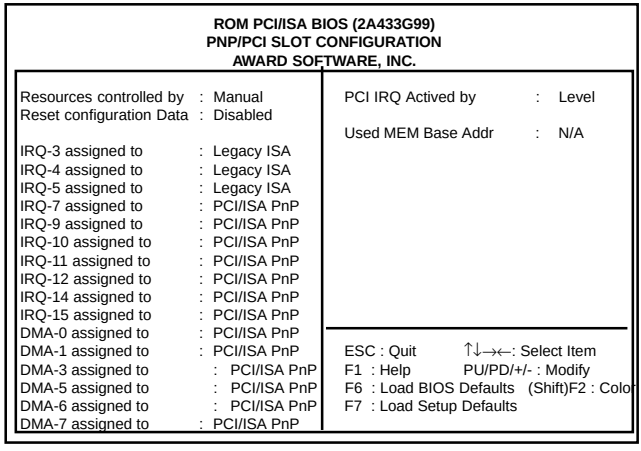
7. RTCOn by time (hh:mm):
If you choose Enabled on RTC Alram function, the RTCOn by time will show. You may set up the time you want to power on your computer.

3.7. PNP/PCI SLOT CONFIGURATION

This section describes configuring the PCI bus system. PCI (Personal Computer Interconnect) is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communication with its own special components.

Run the PNP/PCI Slot Configuration program as follows.

1. Choose " **PCI SLOT CONFIGURATION** " from the Main Menu and a screen with a list of items appears.


ROM PCI/ISA BIOS (2A433G99)
PNP/PCI SLOT CONFIGURATION
AWARD SOFTWARE, INC.
Resources controlled by : Manual
Reset configuration Data : Disabled
IRQ-3 assigned to : Legacy ISA
IRQ-4 assigned to : Legacy ISA
IRQ-5 assigned to : Legacy ISA
IRQ-7 assigned to : PCI/ISA PnP
IRQ-9 assigned to : PCI/ISA PnP
IRQ-10 assigned to : PCI/ISA PnP
IRQ-11 assigned to : PCI/ISA PnP
IRQ-12 assigned to : PCI/ISA PnP
IRQ-14 assigned to : PCI/ISA PnP
IRQ-15 assigned to : PCI/ISA PnP
DMA-0 assigned to : PCI/ISA PnP
DMA-1 assigned to : PCI/ISA PnP
DMA-3 assigned to : PCI/ISA PnP
DMA-5 assigned to : PCI/ISA PnP
DMA-6 assigned to : PCI/ISA PnP
DMA-7 assigned to : PCI/ISA PnP
PCI IRQ Actived by : Level
Used MEM Base Addr : N/A
ESC : Quit
↑↓→←: Select Item
F1 : Help
PU/PD/+/- : Modify
F6 : Load BIOS Defaults
(Shift)F2 : Color
F7 : Load Setup Defaults

* ***Resources Controlled By***

The Award PnP can automatically configure all the boot and PnP compatible devices. If you select Auto, all the interrupt request (IRQ)&DMA assignment fields disappear, as the BIOS automatically assigns them.

The choice: Auto and Manual.

**** Reset Configuration Data***

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup. If you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating systm cannot boot. The choice: Enabled & Disabled

* ***IRQ Assigned to***
When resources are controlled manually, assign each system interrupt as Legacy ISA Devices or PCI/ISA PnP Devices. Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific interrupt (such as IRQ4 for serial port 1). PCI/ ISA PnP Devices compliant with the PnP standard, whether designed for PCI or ISA bus architecture.

**** DMA Assigned to***
When resources are controlled manually, assign each system DMA channel as Legacy ISA Devices and PCI/ISA PnP Devices. Legacy ISA Devices compliant with the original PC AT bus specification, requiring a specific DMA channel. PCI/ISA PnP Devices compliant with the PnP standard, whether designed for PCI or ISA bus architecture.

**** PCI IRQ Activated by***
This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised, otherwise by your system's manufacturer.
The choice: Level and Edge

**** Use MEM Base Addr***
Select a base address for the memory area used by any peripheral that requires high memory.
The choice: C800, CC00, D000, D400, D800, DC00, NA

3.8. INTEGRATED PERIPHERALS SETUP

The **"INTEGRATED PERIPHERALS"** is used to control the values of the I/O chipset registers. These registers control the mode of HDD type and I/O address port.

Run the Integrated Peripherals as follows:

3.8.1. Choose " INTEGRATED PERIPHERALS " from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS (2A433G99)
STANDARD INTEGRATED PERIPHERALS
AWARD SOFTWARE, INC.

IDE HDD Block Mode	: Enabled	Parallel Port Mode	:ECP+EPP
		ECP Mode Use DMA	: 3
Primary IDE Channel	: Enabled		
Read Prefetch	: Disabled	Build in CPU Audio	: SB16
Write Buffering	: Disabled	Audio I/O Base Address	: 220H
Master Driver PIO Mode	: Auto	MPU-401 I/O Base Address	: 330H
Slave Driver PIO Mode	: Auto	Audio IRQ Select	: IRQ5
		Audio Low DMA Select	: DMA 1
Secondary IDE Channel	: Enabled	Audio High DMA Select	: DMA 5
Read Prefetch	: Disabled		
Write Buffering	: Disabled		
Master Drive PIO Mode	: Auto	Video Memory Size	: 2.5M
Slave Drive PIO Mode	: Auto	TV Output Select	: Enabled
		TV Output Mode	: NTSC
KBC Input Clock	: 8MHz		
Onboard FDC Controller	: Enabled		
Onboard Serial Port 1	: Auto		
Onboard Serial Port 2	: Auto	ESC : Quit	↑↓→←: Select Item
Onboard UART 2 Mode	: Standard	F1 : Help	PU/PD/+/- : Modify
Onboard Parallel Port	: 378/IRQ7	F6 : Load BIOS Default	(Shift)F2 : Color
		F7 : Load Setup Defaults	

IDE Hard Disk Drive Mode Setting

The BIOS supports two kind of methods to set up your IDE Hard Disk drive Mode. One is auto, another is manual mode.
In auto mode, BIOS can auto detect HDD's mode, but in some old type HDD that can't meet ATA specification, the BIOS will detect wrong Mode and cause system boot fail.You must change auto mode to manual mode and try a proper mode that can meet your HDD specification. There are five modes defined in manual mode. They are mode 0,1,2,3,4. The default setting for on board timing is auto mode that it will provide optimum performance for your HDD.

IDE HDD Block Mode
This allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive (HDD). Enabled means IDE controller uses block mode and Disabled means IDE controller uses standard mode.

Primary/Secondary IDE Channel
Use the on-board IDE (default). You may separately disable the primary/second channel on an IDE interface installed in a PCI expansion slot.

Onboard FDD Controller
This should be enabled if your system has a floppy disk drive (FDD) installed on the system board and you wish to use it. Even when so equipped, if you add a higher performance controller, you will need to disable this feature. The choice is Enabled or Disabled.

Onboard Serial Port
This item allows you to determine access onboard serial port 1/port 2 controller with which I/O address.
The Choice: 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto

Onboard Parallel Port
Select a logical LPT port name and matching address for the physical parallel (printer) port.
The choice: 378H/IRQ7, 278H/IRQ5, 3BCH/IRQ7, Disabled

Parallel Port Mode
Select an operating mode for the onboard parallel port. Select Compatible or Extended unless you are certain both your hardware and software support EPP or ECP mode.
The choice: ECP+EPP1.7, EPP1.7+SPP, EPP1.9+SPP, ECP+EPP1.9, ECP, Normal, SPP.

Build in CPU Audio
This item allows you to select the option of build in CPU Audio function.
The choice: SB16, SB Pro, Disable

Audio I/O Base Address
This chipset traps I/O accesses for Sound Blaster compatibility at either 220H or 240H.
The choice: 220H, 240H, 260H, 280H

MPU-401 I/O Base Address
This chipset traps I/O accesses for ROLAND MPU 401 UART interface at 330H, 300H, or Disable
The choice: 330H, 300H, Disable

Audio IRQ Select
Select an interrupt for the audio port.
The choice: IRQ2, IRQ5, IRQ7, IRQ10, Disable

Audio Low DMA Select
This chipset supports I/O trapping for low DMA accesses and allows you to select the Audio Low DMA type.
The choice: DMA0, DMA1, DMA3, Disable

Audio High DMA Select
This chipset supports I/O trapping for high DMA accesses and allows you to select the Audio High DMA type.
The choice: DMA5, DMA6, DMA7, Disable

Video Memory Size
Select the Video memory size.
The choice: 1.5M, 2.5M

TV Output Select
This chipset supports TV Out function.
The choice: Enable, Disable

TV Output Mode
This allows you to select TV output type.
The choice: NTSC, PAL

3.8.2. How to disable on board Sound function?

The GCT-MGXm M/B offers the on board sound function. This on board function can be disabled from BIOS Setup if using additional Sound Card. Please kindly check the below process.

1. In "BIOS Setup", choose "Integrated Peripherals, then Enter.
2. In "Build in CPU Audio", select Disable, then ESC.
3. The on board Audio is disabled now.

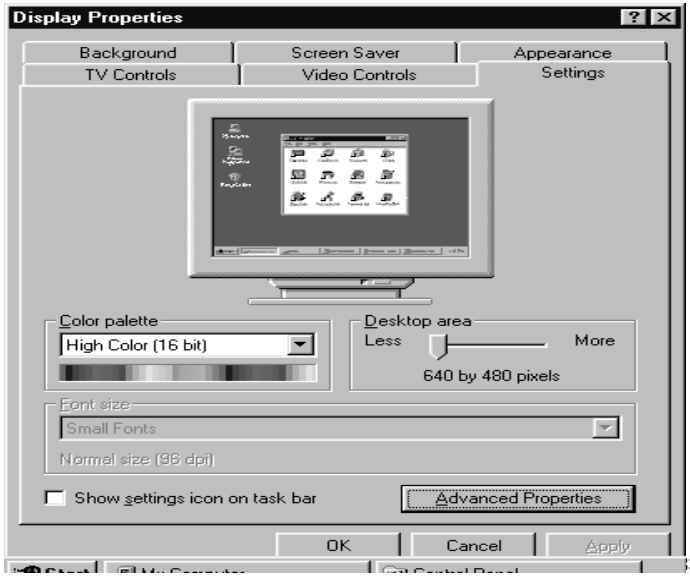
* Please see the table in Page 26.

3.8.3. Virtual Screen Function

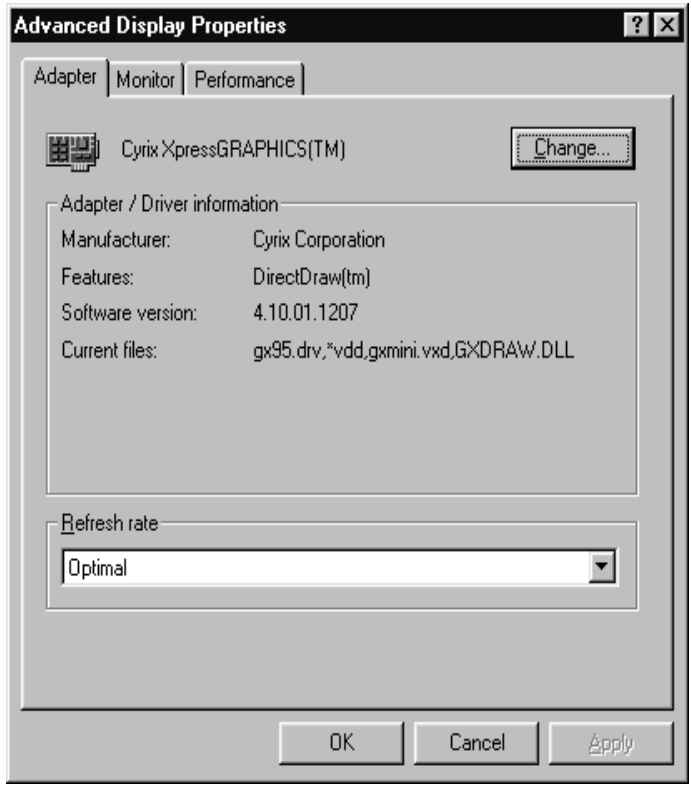
The GCT-MGXm M/B offers the Virtual Screen function when both Monitor and TV are used. (Please make sure that your MGXm M/B has TV OUT function.)

1. How to use Vitural Screen in both TV and Monitor?

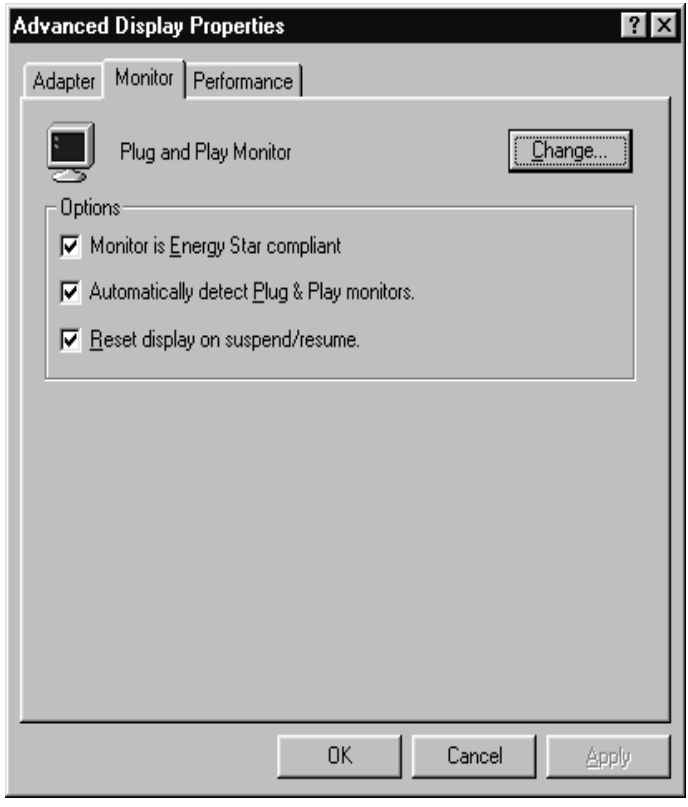
a. Under "Display Properties", open "Settings". Then select "Advanced Properties".

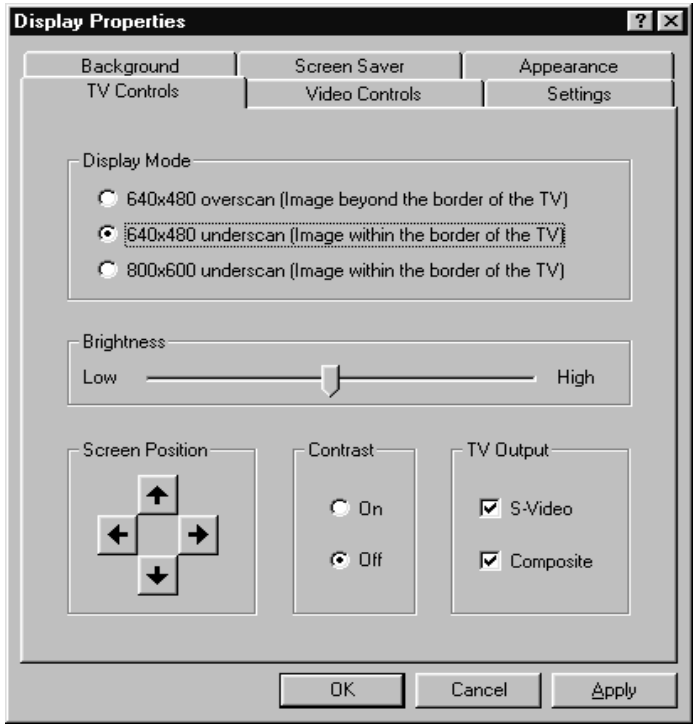


b.Under "Adapter", please make sure the driver of Cyrix XpressGRAPHICS (TM) has been installed well.



c. In "Monitor", you may set "Plug and Play Monitor" or "640 x 480 Monitor





d. In "Display Properties", you will see "TV Controls". Under "TV Output", there are two selection-- S-Video and Composite. Please select these two items.

e. In "TV Controls", you can select 640 x 480 overscan, 640 x 480 underscan, and 800 x 600 underscan. And you can adjust TV's Brightness, Screen Position, and Contrast.

2. The Operating Process:

a. In "TV Controls", if you select 640 x 480 underscan (see chart 1) and in "Display Setting", the Desktop Area is set 800 x 600 (see chart 2). Then, the Virtual Screen function is enabled in which both the TV and CRT can be used together.

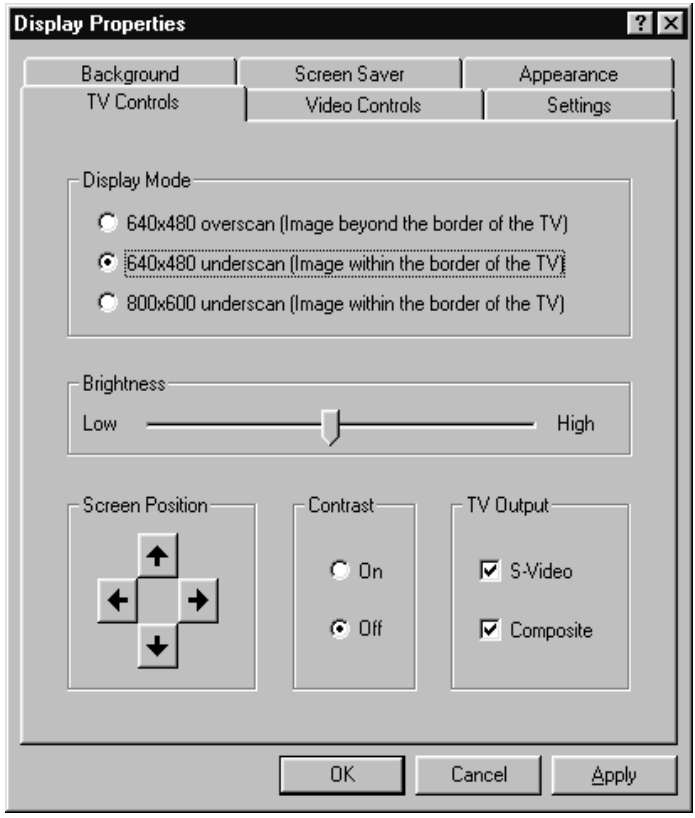


Chart 1

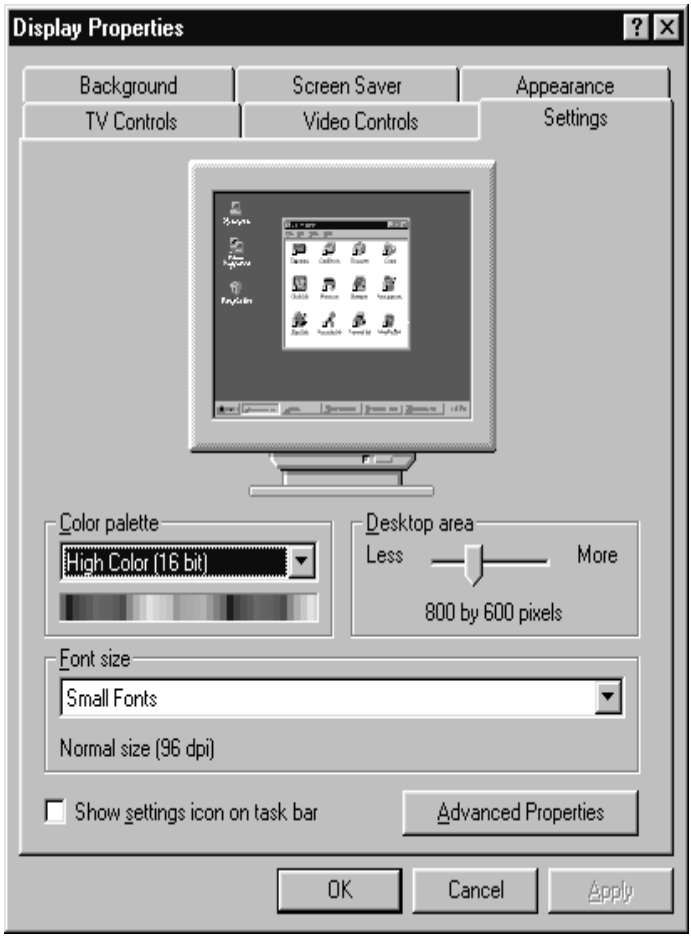
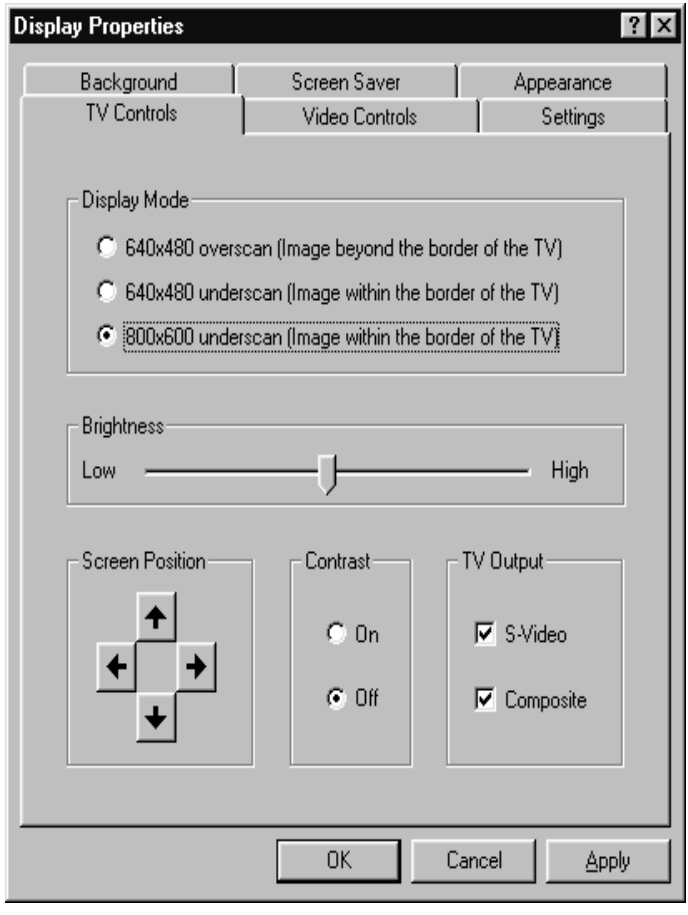
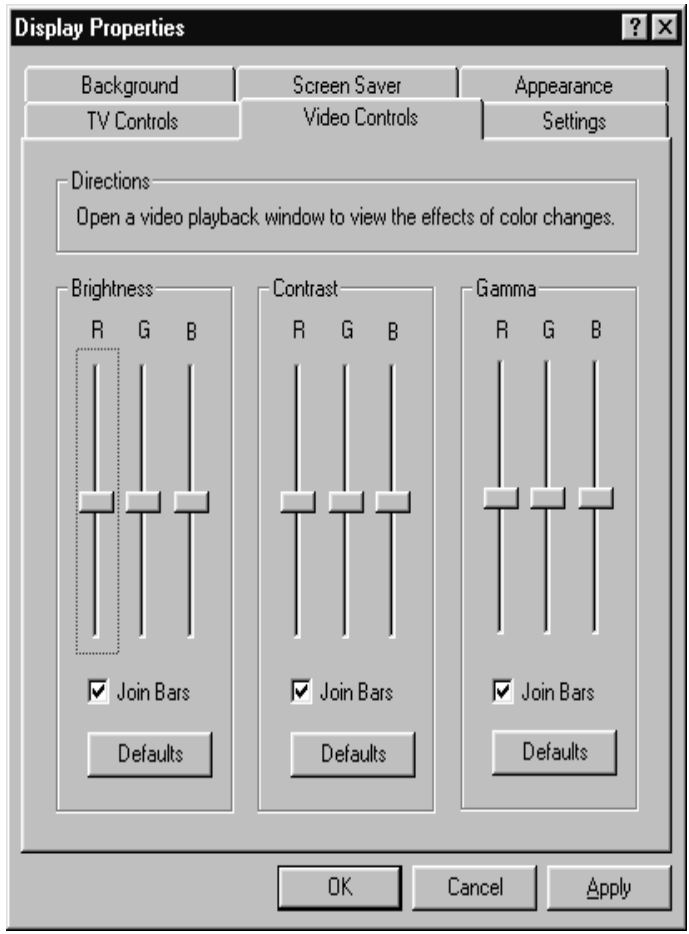

Display Properties
Background
Screen Saver
Appearance
TV Controls
Video Controls
Settings
Color palette
High Color (16 bit)
Desktop area
Less
More
800 by 600 pixels
Font size
Small Fonts
Normal size (96 dpi)
Show settings icon on task bar
Advanced Properties
OK
Cancel
Apply

Chart 2

c. In "TV Controls", if select 800 x 600, then the setting value in Desktop Area should greater then 800 x 600 which is 1024 x 768.



3. When you use MPEG to play Movie, you may use "Video Controls Item" to adjust proper Brightess, Contrast, and Gamma under "Display Properties." Please kindly note that this adjusting function only works for Video Picture or TV Picture, but is workless to Monitor Screen.



3.9. LOAD SETUP DEFAULTS

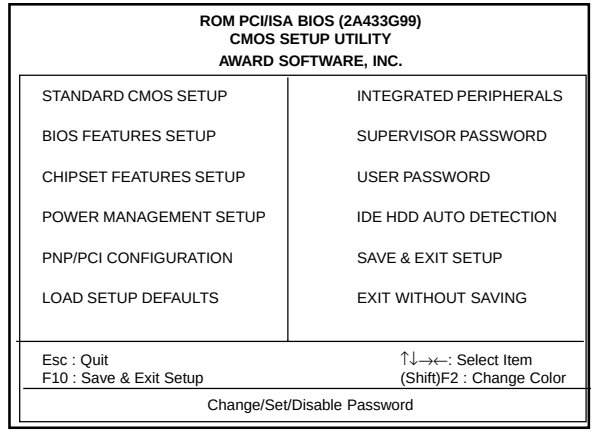
This Main Menu item loads the default system values. **These settings are recommended for optimum performance**. If the CMOS is corrupted **when enter BIOS setup utility, you must load setup default again**. Choose this item and the following message appears:

" Load SETUP Defaults (Y/N)? N "

To use the Setup defaults, change the prompt to "Y" and press <**Enter**>.

3.10. PASSWORD SETTING

This Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. The password cannot be longer than 8 characters.



Note: Keep a safe record of the new password. If you forget or lose the password, the only way to access the system is to discharge CMOS memory jumper .

3.11. IDE HDD AUTO DETECTION

1. If your system has an IDE hard drive, you can use this utility to detect its parameters and automatically enter them into the Standard CMOS Setup.

2.

ROM PCI/ISA BIOS (2A433G99)
IDE HDD AUTO DETECTION
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :								

Sekect Primary Master Option (N=Skip):N

OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2(Y)	854	828	32	0	1655	63	LBA
1	854	1656	16	65535	1655	63	NORMAL
3	854	828	32	65535	1655	63	LARGE

Note : Some OSes (like SCO-UNIX) must use "NORMAL" for installation

ESC : Skip

For IDE hard disk driver,the BIOS provides three modes to support both normal IDE hard disk and also drivers large than 528MB, a short description of three modes as follows:

a. **Normal mode**:
For drivers small than 528MB

b. **Large Mode**:
For drives larger than 528MB that do not use LBA. There can only be used with MS-DOS operating system.

c. **LBA mode**:
For drivers larger than 528MB and up to 8.4GB that use logic block addressing mode. Normally we recommand to select LBA Mode if your HDD drivers large than 528MB.

3. This utility will autodetect as many as four IDE drivers.

3.12. SAVE & EXIT SETUP

Select this item from the main menu and type " Y " to save the values entered during the current session and then exit the BIOS Setup program. Type " N "to return to the Setup program.

3.13. EXIT WITHOUT SAVING

Select this item from the main menu and type " Y " to exit the BIOS Setup program without saving the values entered during the current session. Type " N " to return to the Setup program.

3.14. UPDATING YOUR MAINBOARD'S BIOS

Updating BIOS procedures (only when necessary):

1. Create a bootable system floppy diskette by typing[FORMAT A:/S] from DOS Prompt without creating "AUTOEXEC.BAT" and "CONFIG.SYS" files.

2. Download an updated AWARD BIOS file from FTP, or internet (WWW) and save to the Diskette you created above.

3. Boot from the floppy diskette you created above.

4. At the "A:\" prompt, type:[AWDFLASH] and then the <Enter> key.

5. Enter 2 "Update BIOS Main Block From File" from the Main Menu or option 2 "Update BIOS Including Boot Block and ESCD" from the Ad-vanced Features Menu if prompted by option 2 Of the Main Menu.

6. The program displays a second screen prompting you for the name of the BIOS file. Type in the complete file name and extension of the new BIOS, and then press the <Enter> key. The utility then updates the BIOS file from disk.

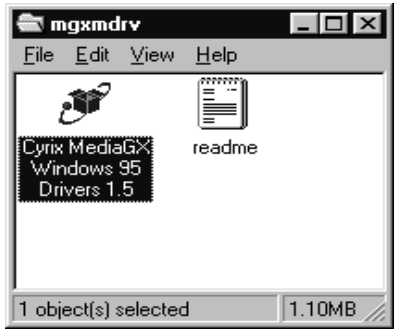
7. After updating the new BIOS file, exit the Flash Memory Writer utility and then trun off your system.

8. Turn on your computer and hold down the <Delete> key to enter BIOS setup. You must select "Load Setup Default" to affect the new BIOS, then you may set other items from the Main Menu.

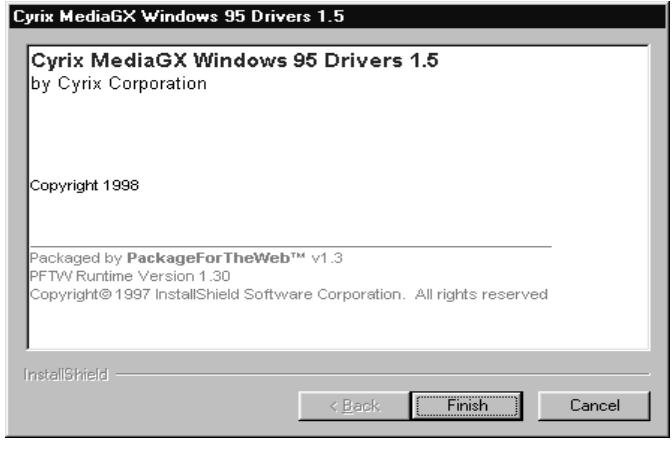
Appendix A: Driver Installation

VGA & Sound Driver Installation Under Microsoft Windows 95:

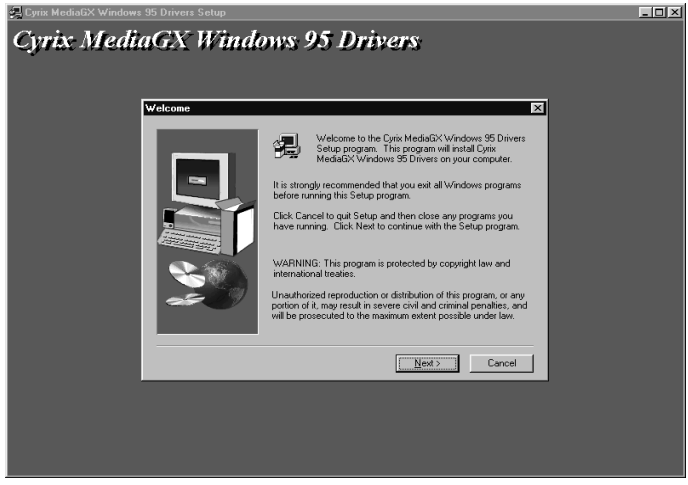
1. Double click the file of "Cyrix MediaGX Windows 95 Drivers exe" from the driver disk.



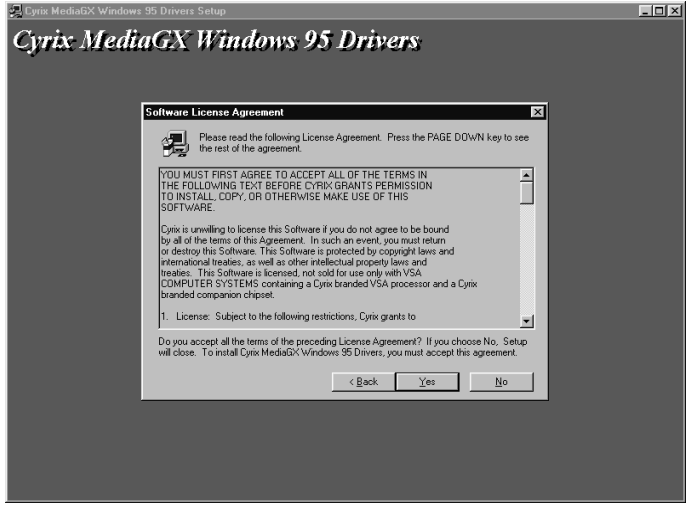
2. Click the "Finish" button on the title screen that appears. This signals InstallShield to unpack the necessary files and to begin the installation process.



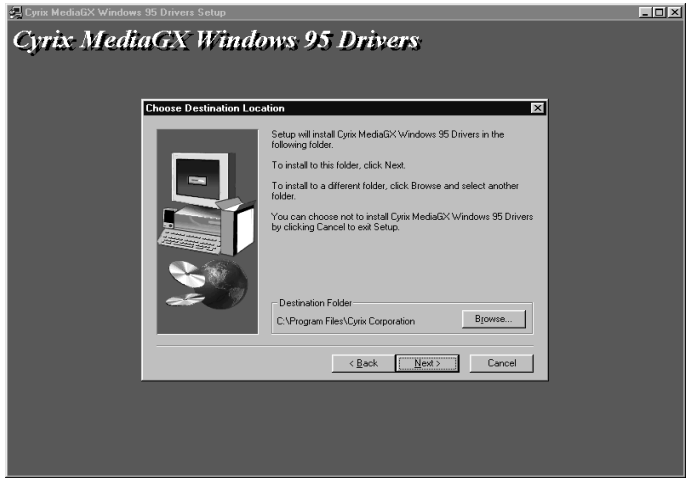
3. The InstallShield intro screen will appear. Click "Next" to proceed.


Cyrix MediaGX Windows 95 Drivers Setup
Cyrix MediaGX Windows 95 Drivers
Welcome
Welcome to the Cyrix MediaGX Windows 95 Drivers Setup program. This program will install Cyrix MediaGX Windows 95 Drivers on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Cancel

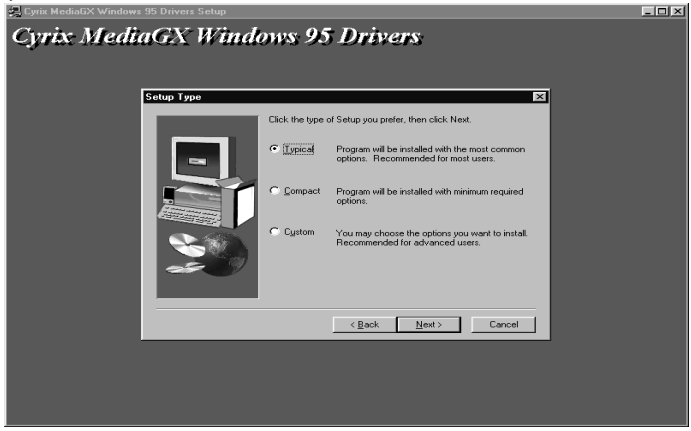
4. You will see the Cyrix License agreement for this software. Select "Next" to proceed.


Cyrix MediaGX Windows 95 Drivers Setup
Cyrix MediaGX Windows 95 Drivers
Software License Agreement
Please read the following License Agreement. Press the PAGE DOWN key to see the rest of the agreement.
YOU MUST FIRST AGREE TO ACCEPT ALL OF THE TERMS IN THE FOLLOWING TEXT BEFORE CYRIX GRANTS PERMISSION TO INSTALL, COPY, OR OTHERWISE MAKE USE OF THIS SOFTWARE.
Cyrix is unwilling to license this Software if you do not agree to be bound by all of the terms of this Agreement. In such an event, you must return or destroy this Software. This Software is protected by copyright laws and international treaties, as well as other intellectual property laws and treaties. This Software is licensed, not sold for use only with VSA COMPUTER SYSTEMS containing a Cyrix branded VSA processor and a Cyrix branded companion chipset.
1. License: Subject to the following restrictions, Cyrix grants to
Do you accept all the terms of the preceding License Agreement? If you choose No, Setup will close. To install Cyrix MediaGX Windows 95 Drivers, you must accept this agreement.
< Back
Yes
No

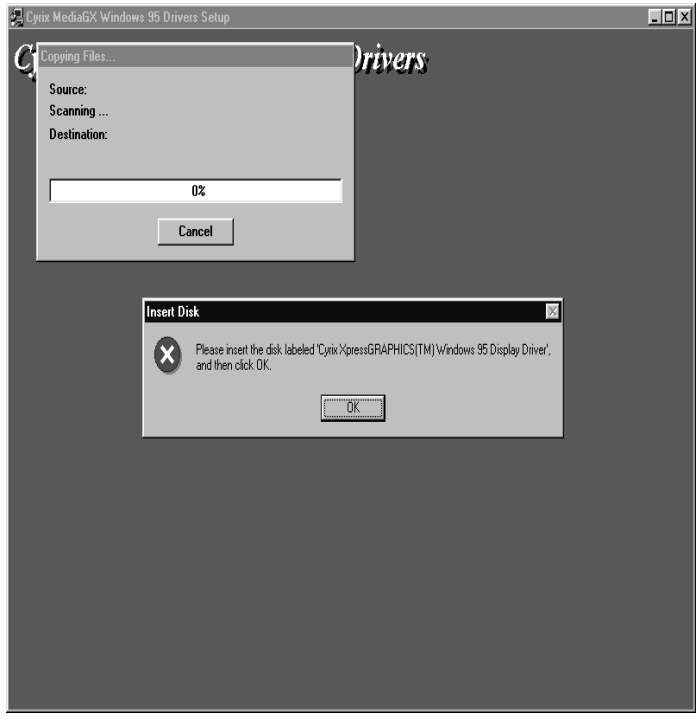
5. The Install Directory requestor will appear. Accept the default directory or browse for another location. Click "Next" to proceed.


Cyrix MediaGX Windows 95 Drivers Setup
Cyrix MediaGX Windows 95 Drivers
Choose Destination Location
Setup will install Cyrix MediaGX Windows 95 Drivers in the following folder.
To install to this folder, click Next.
To install to a different folder, click Browse and select another folder.
You can choose not to install Cyrix MediaGX Windows 95 Drivers by clicking Cancel to exit Setup.
Destination Folder
C:\Program Files\Cyrix Corporation
Browse...
< Back
Next >
Cancel

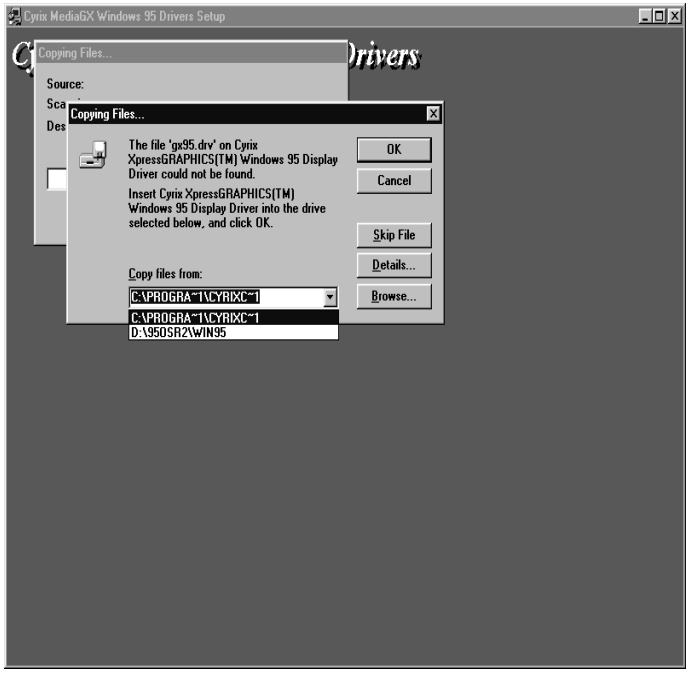
6. The Setup Type requestor will appear. Select "Typical", "Compact", or "Custom". "Typical" and "Compact" are identical. "Custom" allows you to select the components you would like to install. Click "Next" to proceed.


Cyrix MediaGX Windows 95 Drivers Setup
Cyrix MediaGX Windows 95 Drivers
Setup Type
Click the type of Setup you prefer, then click Next.
Typical
Program will be installed with the most common options. Recommended for most users.
Compact
Program will be installed with minimum required options.
Custom
You may choose the options you want to install. Recommended for advanced users.
< Back
Next >
Cancel

7. If you select "Typical" or "Compact", the installation process will begin now. If you select "Custom", you will be able to select which drivers you want to install (Audio, Video, and/or Joystick).
Click on the drivers you want installed and click "Next" to proceed.



8. If you are installing the video drivers, a bug in Windows will cause a Windows requestor to come up asking for a disk labeled "Cyrix XpressGRAPHICS (TM) Windows 95 Display Driver". Simply click "OK" on this requestor.



9. Another Windows requestor will now appear. Pull down the menu on the bottom of this requestor and select your install directory which will appear there, then click "OK". The installation will then complete.

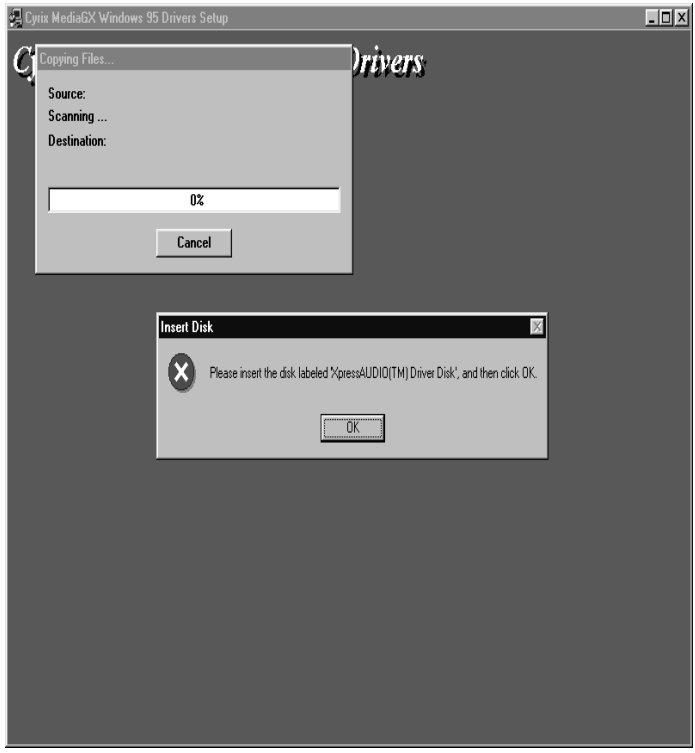
<< NOTE>> If the install directory name is longer than 8 characters in procedure 5, it will truncated to 8 characters in this procedure. For example, if the directory you selected in procedure 5 is :

C:\Program Files\Cyrix Corporation

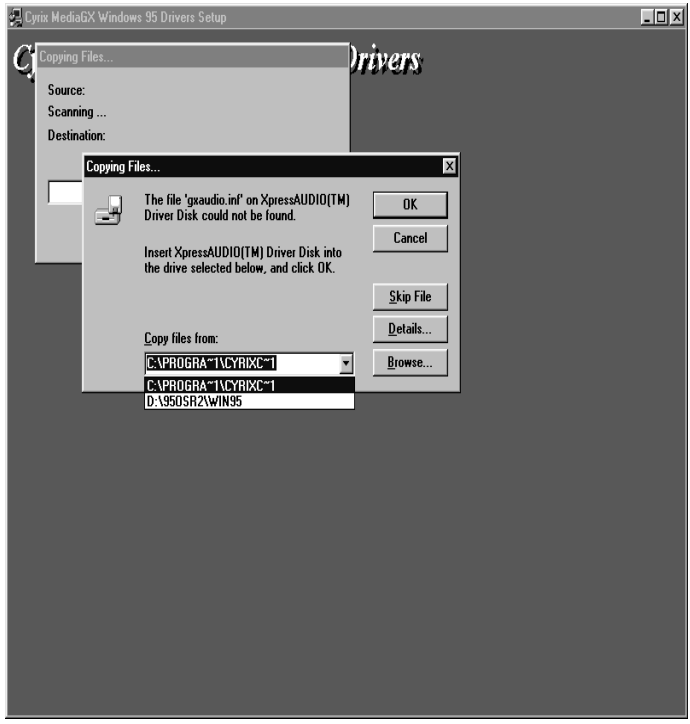
It will appear as:

C:\PROGRA~1\CYRIXC~1

10. If you are installing the audio drivers, you will have to repeat step 8 and 9. The only difference will be that the requestor in step 8 will ask for a disk labeled "Cyrix XpressAUDI(TM) Driver Disk".



11. Windows will probably then ask for the "Windows 95 CD-ROM" and prompt you for specific files from the CD. Insert your Windows 95 CD and click "OK". The number and type of files requested at this point will vary from system to system-just continuous to point the requestor to the Window 95 CD for any files it is looking for.

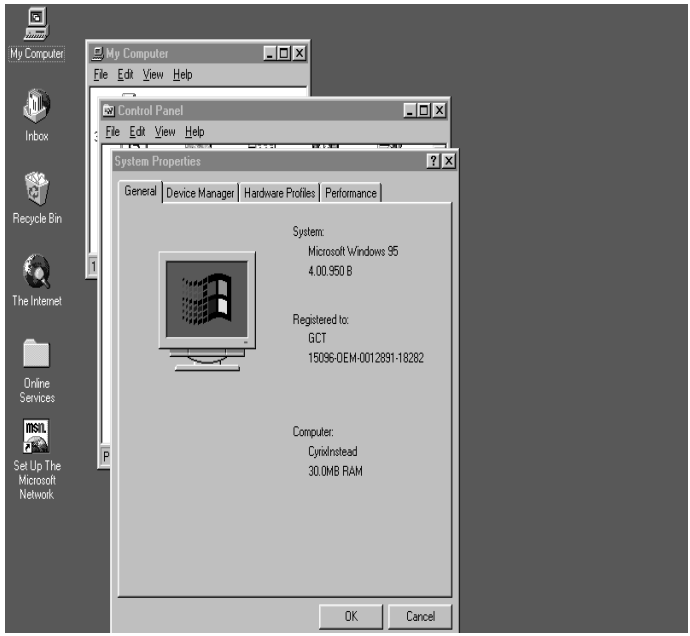


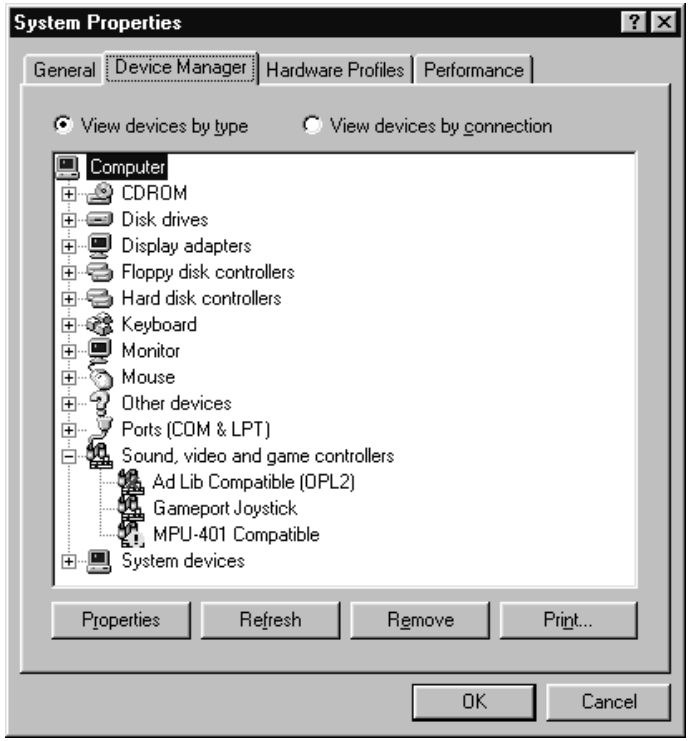
12. Click "Finish" to reboot your computer. This will complete the installing process.

Cyrix MediaGX Windows 95 Drivers Setup
Cyrix MediaGX Windows 95 Drivers
Cyrix MediaGX Windows 95 Drivers
To complete the installation of your new Cyrix MediaGX Drivers, you must restart your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish

Precaution of Win 95 Driver Installing Processes:

1. First, check "Devices Manager" from "System Properties"-- "Control Panel"-- "My Computer".





2. Open "Sound, video and game controllers", if you see "AdLib Compatible (OPL2) and MPU-401 Compatible, you will need to remove these two, then running the Cyrix MediaGX Windows 95 Driver.

VGA & Sound Driver Installation

Under Microsoft Windows 3.1:

For Video:

1. Open "Windows Setup", then choose "Option", select " Change System Setting".

2. Under "Display", choose "Other Display (Requires disk from OEM), then A:/win31, and OK. Choose the resolution that you want to use from the "Choose a display driver from the list". Then, OK.

3. Restart your computer!

For Audio:

1. In "Control Panel", choose "Drivers", then choose "ADD".

2. Select "Creative Labs Sound Blaster 1.5", then OK.

3. You will see a "Sound Blaster Setup Table", then choose 220 for Port and 5 for Interrupt. Then, OK.

4. Restart your computer!

VGA & Sound Driver Installation

Under Microsoft Windows NT:

For Video:

1. In "My Computer", choose "Control Panel", then "Display".

2. In Display, choose "Settings", then OK. Then, select "Display Type".

3. Choose "Change", then "Have Disk", select BROWSE.

4. Select the version that you installed for Windows NT, then choose "gx". Then, OK.

5. Restart your computer.

For Audio:

1. In "My Computer", choose "Control Panel", then "Multimedia".

2. Select "Devices", then choose "ADD".

3. Select "Creative Labs Sound Blaster 1x, Pro, 16", then OK.

4. You will see a "Sound Blaster Base I/O Address" table. Choose 220 for I/O Address, then select "Continue". Then, OK.

5. You will see a "Sound Blaster 16 Configuration" table, select Interrupt: 5, DMA Channel: 1, DMA Channel (16 bit): 5, MPU401: 330. Then, OK.

6. Restart your computer.

Appendix B: Static Electricity Precautions

Static Electricity Precautions

Static electricity can easily damage your mainboard. Observing a few basic precautions can help you safeguard against damage that could result in expensive repairs. Follow the measures below to protect your equipment from static discharge:

** Keep the mainboard and other system components in their anti-static packaging until you are ready to instll them.

** Touch a grounded surface before you remove any system component from its protective anti-static packaging. A grounded surface within easy reach is the expansion slot covers at the rear of the system case or any other unpainted portion of the system chassis.

** During configuration and installation, touch a grounded surface frequently to discharge any static electric charge that may build up in your body. Another option is to wear a grounding wrist strap.

** When handling a mainboard or an adapter card, avoid touching its components. Handle the mainboard and adapter cards either by the edges or by the mounting bracket that attaches to the slot opening in the case.

Appendix C: The Recording Processes of MIC-IN, LINE-IN, CD-IN under Window 95

1. Click twice the "SPEAKER" picture on the right end side of your computer screen.

2. A "Volume Control Table" will show up. Then, open "Options" and then "Properties".

3. In "Adjust Volume", select "Playback". You will see "Show the following Volume Control", please select all the items that list in this section.

4. In "Volume Control Table", please do not select MUTE.

5. Under "Volume Control Table", open "Options" and "Properties" again. Then, choose "Recording".

6. Under "Recording Control Table", select the only way that you want to use. If you want to use MIC for recording, please select MIC-IN only and the other selection cannot be chose.

7. After selection, you will need to do one more step to make the selection complete. You need to click "Record" and then "Stop". After that, you may begin to record.

Appendix D: VGA Resolution

Memory Capacity Requirement

This chart describes memory capacity requirement for you to have different VGA resolution.

Resolution	Colors	1.5MB	2.5MB
640 x 480	16 colors 256 colors High color		
800 x 600	16 colors 256 colors High color	X	X
1024 x 768	16 colors 256 colors High color	X X	X
1280 x 1024	16 colors 256 colors	X X	X

Resolution Table

Resolution	Colors	Refresh Rate (HZ)	Dot Clock (MHz)	PCLK (MHz)	Graphics Port Width (Bits)
640 x 480	256 colors 16 colors High color 16 bit	59.65 60.13 59.65	50.11 50.50 50.11	25.05 25.25 50.11	8 8 16
800 x 600	256 colors High color 16 bit	60 60	65 65	65 65	8 16
1024 x 768	256 colors High color 16 bit	60.35 60.35	80 80.50	40 80.50	8 16
1280 x 1024	256 colors	60	110	110	16